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Date: 9/5/2005
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Continuity Information for 10/052323

Parent Data

10052323is a continuation in part of 09563826Which Claims Priority from Provisional Application 60132216Which is a continuation in part of 09533149Which is a continuation in part of 09402527is a national stage entry of PCT/US98/16739 International Filing Date: 08/13/1998Which Claims Priority from Provisional Application 60055520Which Claims Priority from Provisional Application 60075113

Child Data

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Inventor Information for 10/052323

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 **PALM INTRANET**Day : Monday
Date: 9/5/2005
Time: 10:43:25**Application Number Information**

Application Number: 10/052323

Assignments

Filing or 371(c) Date: 01/18/2002

Effective Date: 01/18/2002

Application Received: 01/23/2002

Pat. Num./Pub. Num: /20030125278

Issue Date: 00/00/0000

Date of Abandonment: 00/00/0000

Attorney Docket Number: 858610-2003.2

Status: 71 /RESPONSE TO NON-FINAL OFFICE ACTION ENTERED
AND FORWARDED TO EXAMINER

Confirmation Number: 3301

Examiner Number: 77509 / **WOITACH, JOSEPH**

Group Art Unit: 1632

IFW IMAGE

Class/Subclass: 514/044.000

Lost Case: NO

Interference Number:

Unmatched Petition: NO

L&R Code: Secrecy Code:1

Third Level Review: YES

Secrecy Order: NO

Status Date: 06/28/2005

Oral Hearing: NO

Title of Invention: IMMUNIZATION OF ANIMALS BY TOPICAL APPLICATIONS OF A
SALMONELLA-BASED VECTOR

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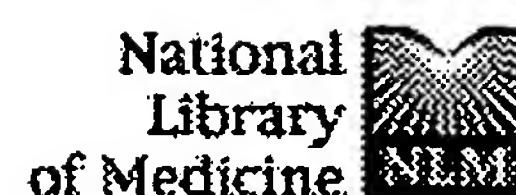
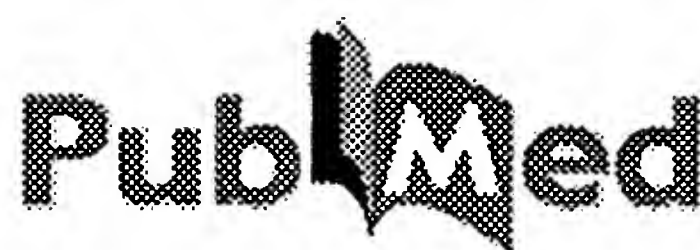
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OBJECTS AND SUMMARY OF THE INVENTION

[0022] Non-invasive vaccination onto the skin (NIVS) can improve vaccination schemes because skin is an immunocompetent tissue and this non-invasive procedure requires no specially trained personnel. Skin-targeted non-invasive gene delivery can achieve localized transgene expression in the skin and the elicitation of immune responses (Tang et al., 1997) and the mechanism for these responses is different than that from topical application of protein-based vaccines in conjunction with cholera toxin (Glenn et al., 1998). These results indicate that vector-based NIVS is a novel and efficient method for the delivery of vaccines. The simple, effective, economical and painless immunization protocol of the present invention should make vaccination less dependent upon medical resources and, therefore, increase the annual utilization rate of vaccinations.

[0032] Also, the invention provides compositions used in the methods. For instance, the invention provides a prophylactic vaccine or a therapeutic vaccine or an immunological or a therapeutic composition comprising the vector, e.g., for use in inducing or stimulating a response via topical application and/or via mucosal and/or nasal and/or perlingual and/or buccal and/or oral and/or oral cavity administration.



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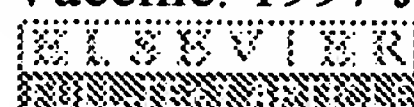
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1: Vaccine. 1997 Jun;15(8):818-20.

Related Articles, Links



Mucosal immunization with DNA-liposome complexes.

Klavinskis LS, Gao L, Barnfield C, Lehner T, Parker S.

Department of Immunology, Guy's Hospital Medical School, United Medical School of Guy's Hospital, London, UK.

The mucosal surfaces represent the primary site for transmission of several viruses including HIV. To prevent mucosal transmission and dissemination to the regional lymph nodes, an effective HIV vaccine may need to stimulate immune responses at the genital and rectal mucosa. Optimal induction of mucosal immunity in general requires targeting antigens to the specialized antigen presenting cells of mucosal associated lymphoid tissues. The nasal mucosa may provide a simple, non-invasive route to deliver DNA encoding the introduced gene to stimulate mucosal immunity. As a first step to evaluate the feasibility of this approach, we have investigated as a model system, systemic and mucosal immune responses elicited to firefly luciferase generated by DNA immunization. Incorporating DNA into liposomes with cationic lipids enhanced luciferase expression in nasal tissue, and was associated with induction of a humoral response in serum and vaginal fluids and also a proliferative and cytotoxic T lymphocyte response in the spleen and iliac lymph nodes draining the genital and rectal mucosa.

PMID: 9234523 [PubMed - indexed for MEDLINE]

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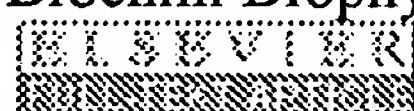
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1: Biochim Biophys Acta. 2002 Aug 15;1572(1):1-9.

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Enhanced delivery of naked DNA to the skin by non-invasive in vivo electroporation.

Zhang L, Nolan E, Kreitschitz S, Rabussay DP.

Department of Research and Development, Genetronics, Inc., San Diego, CA 92121-1334, USA. lzhang@genetronics.com

DNA delivery to skin may be useful for the treatment of skin diseases, DNA vaccinations, and other gene therapy applications requiring local or systemic distribution of a transgene product. However, the effective, consistent and patient-friendly transfection of skin cells remains a challenge. In a mouse model, we evaluated the effectiveness of intradermal injection of plasmid DNA followed by noninvasive in vivo electroporation (EP) as a method to improve transfection in skin. We achieved a several hundred-fold stimulation of gene expression by EP, sufficient to produce clinically relevant amounts of transgene product. We studied the effect of DNA dose and time after treatment as well as various EP pulse parameters on the efficiency of gene expression. EP under conditions of constant charge transfer revealed that the applied voltage was the main determinant for transgene expression efficiency while other pulse parameters had lesser effects. Patient-friendly, noninvasive meander electrodes which we designed for clinical applications proved equally effective and safe as plate electrodes. We also showed for the first time that noninvasive EP is effective in stimulating transfection and gene expression in human skin, particularly in the epidermis. Our findings demonstrate the applicability of EP-enhanced DNA delivery to skin for gene therapy, DNA immunization and other areas.

PMID: 12204326 [PubMed - indexed for MEDLINE]

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